MALware Technical Report
Copying Floppy Disks for Apple //e Computers

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Abstract

Instructional text for transferring disk images to the Apple //e for the creation of new floppy disks. The Media Archaeology Lab has both a SuperSerial card and an Uthernet II card that can be used for disk image transfers and this covers the use of both.

About the Author

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Introduction

The Media Archaeology Lab has a number of Apple // series computers and thus a consistent need to create new disks. In addition, the Internet Archive is continually adding new disk images to their online database, sometimes of rare software or things that the lab simply doesn't have. For this reason, we need to be able to consistently create new 5.25" floppy disks for use with our computers. In addition, it is helpful to have a method in place for backing up disk images in case a floppy disk is damaged, or for other archival reasons. This method also serves as the first step for data retrieval of older personal files stored on floppy disk.

Apple IIe Floppy Disk Transfers

The Apple //e in the Lab has both a Super Serial Card and an Uthernet II card. Either one can be used to transfer floppy disk images to or from the Apple. The Super Serial Card is contemporary to the Apple // Series computers and was used to connect to printers and modems, and to network directly with other Apple and Macintosh computers. In modern use it can be connected directly to a PC or Mac via USB. The Uthernet II card is a modern card developed by a2RetroSystems, for connecting legacy devices to the internet via ethernet connection. Both can be used to transfer files to and from modern computers via the program ADTPro.

In order to make a disk, the floppy disk images need to be in DSK or PO format, and can typically be found on either the Internet Archive or the ASIMOV FTP server. Both are regularly updated with new disk images.

Figure 1: ADTPro main screen

Initial Setup

For this process, you will be running ADTPro on the Apple //e and the ADTPro Server on your computer. Use the ADTPro floppy disk in the Apple //e. The current version is 2.0.3. Download the ADTPro Server program on your Mac or PC at adtpro.com.

Super Serial Card Instructions

If you are using the Uthernet II card, skip ahead to the next section

Figure 2: Apple Super Serial card

Make sure that the Super Serial Card is inserted into slot 2 in the Apple //e. You will be plugging the USB cable from the SSC card into your Mac or PC using a 25 pin to USB cable.

Make sure that the SSC card has the "terminal" block pointing down towards the word "Terminal". This will only need to be changed if someone has been printing on the Apple IIe.

From the ADTPro server on your PC or Mac, choose Serial. It should automatically pick the correct serial port, but if necessary, go under File->Serial Configuration and pick the correct port.
On the Apple IIe, start up the ADTPro program, choose "S" for Serial.

If necessary, hit G for Config, and check the settings:
COMMS DEVICE: SSC SLOT 2
BAUD RATE: 115200
BLOCKS AT ONCE: 2

ENABLE SOUND: YES
ENABLE NIBBLES: NO

To verify the connection, hit "D" to get a directory listing
FILENAME: hit <return> to list everything

If you don't see the directory listing or it says "Unable to connect", close the ADTPro programs on both the Apple II and the Mac/PC. Then restart ADTPro Server on your Mac/PC first, and then ADTPro on the Apple II.

Proceed to 'Transfer Images' section

Uthernet II Card Instructions

Make sure the Uthernet II card is installed in slot 3, and the ethernet cable is attached between the card and router.

Figure 3: Uthernet II card from a2RetroSystems

Start the ADTPro Server on your PC, click on Ethernet. Note the "Serving IP" address in the title bar.

Note: on some systems (Mac, for example) ADTPro may incorrectly report 127.0.0.1 as the Serving IP. In this case you'll need to determine the actual IP address of your Mac/PC using say "ifconfig" or "ipconfig", or going into your system settings.

On the Apple IIe, start up the ADTPro program. Choose "E" for Ethernet.
The program should automatically connect using DHCP. If it doesn't, hit G for Config, and check the settings:
ETHERNET SLOT: 3
BLOCKS AT ONCE: 1
ENABLE SOUND: YES
ENABLE NIBBLES: NO
CONFIGURE DHCP: YES
SERVER IP ADDR: set this to your "Serving IP" address from your currently-running ADTPro on your Mac/PC
LOCAL IP ADDR: should be set by DHCP, for example, 192.168.1.108
NETMASK: usually 255.255.255.0
GATEWAY ADDR: should match the MAL network, currently 192.168.1.1

Once you've set the SERVER IP ADDR, click "SAVE CONFIG": YES, the program should return to the main ADTPro ethernet screen.

To verify the connection, hit "D" to get a directory listing
FILENAME: hit <return> to list everything

If you don't see the directory listing or it says "Unable to connect", close the ADTPro programs on both the Apple II and the Mac/PC. Then restart ADTPro Server on your Mac/PC first, and then ADTPro on the Apple II.

Proceed to 'Transfer Images' section

Transfer images from the PC to the Apple IIe

When receiving images from the PC to the Apple II, ADTPro will have access to all of the files within the default "disks" directory of ADTPro on your PC. To transfer a particular disk image, you can either copy your disk image file into this "disks" directory, or you can change the working directory on ADTPro Server (look under the File menu) to the location of your disk images.

Put a blank floppy disk in drive 2. Choose (F)ORMAT, then choose SLOT 6, DRIVE 2.
Then choose (R)ECEIVE, for FILENAME hit <return> to get a list of disk images on your PC
Use the arrow keys to scroll down the list, hit <return> when you get to the desired disk image

On the DESTINATION VOLUME screen, choose SLOT 6, DRIVE 2, hit <return>
The disk image should transfer from your PC to the Apple IIe and be written out to disk

Transfer images from the Apple IIe to the PC
Put your desired floppy disk into drive 2.
Choose (S)END and type a filename, such as MYFLOPPY.DSK. This will become the filename over on the PC. Hit <return>
Choose SLOT 6, DRIVE 2, hit <return>
The disk image should transfer from your Apple IIe to your PC and be written out to the ADTPro working directory

About the Media Archaeology Lab

Founded in 2009 and generously supported by the College of Media, Communication and Information as well as the Department of English at the University of Colorado at Boulder, the motto of the Media Archaeology Lab (MAL) is that "the past must be lived so that the present can be seen." Nearly all digital media labs are conceived of as a place for experimental research using the most up-to-date, cutting-edge tools available. The MAL – which very well might be the largest of its kind in the world – is a place for cross-disciplinary experimental research and teaching using still functioning media from the past. The MAL is propelled equally by the need to both preserve and maintain access to historically important media of all kinds – from magic lanterns, projectors, typewriters to personal computers from the 1970s through the 1990s – as well as early works of digital literature/art which were created on the hardware/software housed in the lab.

The lab is defined as much by what it is not as by what it is. It is a unique humanities lab that is not interested in scientificity. Rather than being hierarchical and classificatory, it is porous, flat, and branching. Objects are organized in any way participants want; everything is functional and made to be turned on. Rather than being an entity you need to apply to be a part of or something you can only participate in as a researcher, librarian, PhD student, anyone may participate in the lab and have a say about what projects we take on, what kinds of work we do. Rather than setting out to adhere to specific outcomes and five year plans, we change from semester to semester and year to year depending on who's spending time in the lab.

The MAL is interested in experiments with temporality, with a disruptive relationship between past, present and future, and with lab infrastructure in general. It is a place for serious play and for playful seriousness. It is an anti-museum museum, in that all of its hundreds of devices, analog and digital, are meant to be turned on and actively played with, opened up, tinkered with, experimented with, created with, and moved around and juxtaposed next to any other device. The MAL acts as a kind of meta-lab for thinking through the infrastructure of labs and how they fundamentally shape and inform what is produced, from games to history, within the confines of the lab structure. The MAL's holdings quietly show how the history of computing is anything but a neat progression of devices simply improving upon and building upon what came before. In other words, the MAL's collection itself is a disruption to a particular notion of temporality underlying another particular notion of "history". With these devices, we can understand the waxing and waning of technologies more in terms of a phylogenetic tree whereby they are altered over time, split into separate branches, hybridized, or are terminated.